



18 CROSSY DRIVE
BEDFORD, MASSACHUSETTS 01730
617-275-2670

Final Screening Site Inspection
Sperry Semiconductor
Norwalk, Connecticut

C-583-8-1-399
August 30, 1991

TDD No. F1-9004-17
Reference No. \$375CTAXI\$
CERCLIS No. CTD980521058

INTRODUCTION

The NUS Field Investigation Team (NUS/FIT) was requested by the Region 1 U.S. Environmental Protection Agency (EPA) Waste Management Division to perform a Screening Site Inspection of Sperry Semiconductor in Norwalk, Connecticut. All tasks were conducted in accordance with Technical Directive Document (TDD) No. F1-9004-17 which was assigned to NUS/FIT on April 10, 1990. The CT DEP performed a Preliminary Assessment of this property in May 1985. On the basis of the information provided in this Preliminary Assessment, the Sperry Semiconductor Screening Site Inspection was initiated.

Background information used in the generation of this report was obtained through file searches conducted at the Connecticut Department of Environmental Protection (CT DEP) and at the EPA. Information was also collected during the NUS/FIT onsite reconnaissance and sampling activities on November 7, 1990.

This package follows guidelines developed under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, commonly referred to as Superfund. However, these documents do not necessarily fulfill the requirements of other EPA regulations such as those under the Resource Conservation Recovery Act (RCRA) or other federal, state or local regulations. Screening Site Inspections are intended to provide a preliminary screening of sites to facilitate EPA's assignment of site priorities. They are limited efforts and are not intended to supersede more detailed investigations.

SITE DESCRIPTION

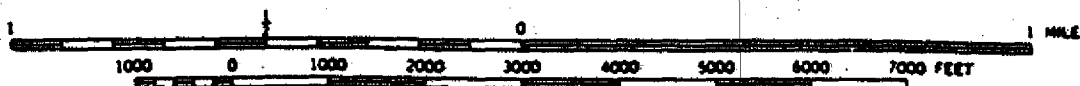
Sperry Semiconductor is located at 380 Main Avenue (Route 7) in Norwalk, Fairfield County, Connecticut (Latitude 41° 08' 25" N, Longitude 73° 25' 33" W) (Figures 1, 2, and 3) (Easterday 1990, 1991a, U.S. EPA 1985). Sperry Semiconductor is the CERCLIS database name for the property, and although the current property owner's name is Pitney Bowes, Inc., the CERCLIS database name will be used throughout this report. The Sperry Semiconductor property is approximately 29.0 acres in size and is located south of the Merrit Parkway (Easterday 1991b). Sperry Semiconductor was identified in a 1985 Preliminary Assessment (PA) as a generator of hazardous materials which were transported to a hazardous waste facility. However, the PA stated that no evidence was found to suggest or substantiate allegations that onsite disposal may have occurred on the property (US EPA 1985).

An 83,000 square foot building is located in the southwest corner of the property. Located behind and in front of the building are small capacity, paved parking areas. The rear parking area is also utilized for shipping and receiving. A large capacity parking area occupies the eastern border of the property (Figure 2). There are no vehicular or pedestrian barriers limiting access to the property; however, Pitney Bowes Inc. maintains a 24 hour guard inside the building with camera surveillance for observing activity outside the building (NUS/FIT 1990).



BASE MAP IS A PORTION OF THE FOLLOWING 7.5' U.S.G.S. QUADRANGLE(S):

NORWALK NORTH, CONNECTICUT, 1960.
NORWALK SOUTH, CONNECTICUT, 1960.

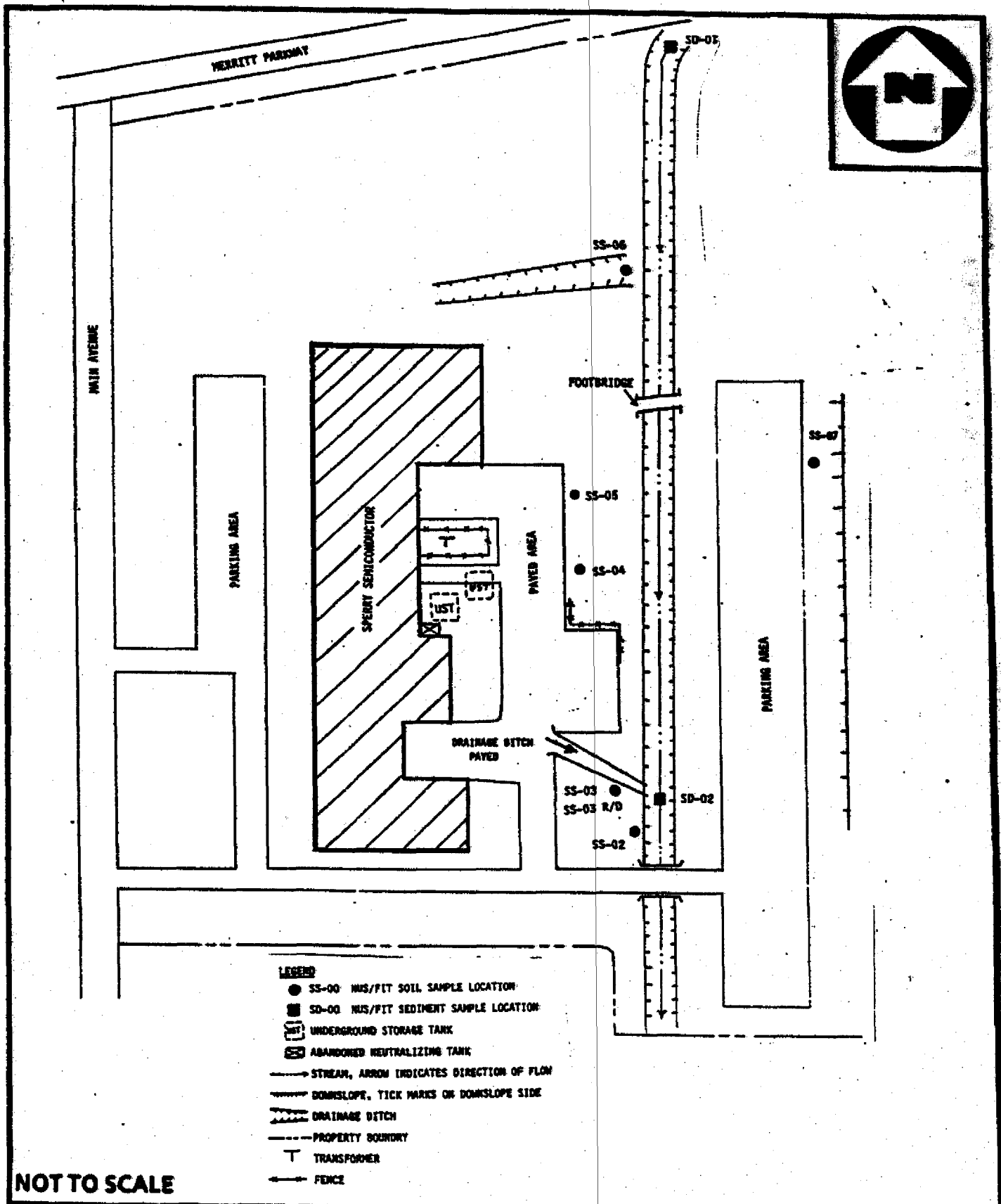


LOCATION MAP

SPERRY SEMICONDUCTOR
NORWALK, CONNECTICUT



FIGURE 1



SITE SKETCH

SPERRY SEMICONDUCTOR
NORWALK, CONNECTICUT



FIGURE 2

The following table presents all identified structures or areas on the Sperry Semiconductor property that are potential sources of contamination, the containment factors associated with each source, and the relative location of each source.

TABLE 1
SOURCE EVALUATION

<u>Potential Source Area</u>	<u>Containment Factors</u>	<u>Spatial Location</u>
floor drains discharging to stream	uncontained	exact location of discharge point(s) to stream is unknown
abandoned neutralizing tank	tank placed in concrete dike	east side of the building, ~20 feet southwest of the 10,000 gallon UST
transformer	pole mounted, placed on a concrete pad, surrounded by chain link fence	east side of the building

(NUS/FIT 1990)

The current property owner, Pitney Bowes Incorporated, is not listed as a RCRA notifier in the Region 1 RCRA database. Currently, there are 103 RCRA notifiers within the corporate limits of Norwalk. Within a 1 mile radius of the Sperry Semiconductor property there are three CERCLA properties. The CERCLA properties are Norwalk Powdered Metals (0.4 mile south), New England Quartz Company (0.6 mile south), and the Kellogg-Deering Wellfield. The Kellogg-Deering Wellfield is located 0.8 miles south-southwest of the Sperry Semiconductor property and is a National Priorities List (NPL) site (U.S. EPA 1991a, 1991b; USGS 1960a). In 1975, trichloroethylene (TCE) and dichloroethylene (DCE) were detected in the Kellogg-Deering wellfield (Ogiela 1984).

SITE ACTIVITY/HISTORY

Sperry Semiconductor, a division of the Sperry Rand Corporation, owned and occupied the property from 1960 to 1968. The original building was constructed in 1960 with a large addition added to the north end of the original building in 1967. From 1962 to 1968, Sperry Semiconductor used the property in the manufacture of linear and digital monolithic integrated circuits, custom hybrid circuits, and special devices (Norwalk Hour 1968). In November 1968, the Sperry Rand Corporation sold the property for one dollar to Pitney Bowes, Incorporated (New York, NY. 1968). Pitney Bowes, Incorporated is still the owner and operates a research and development facility at the Sperry Semiconductor property (NUS/FIT 1990).

No documentation of the specific wastes generated by Sperry Rand Corporation on the property from 1960 to 1968 is available. Therefore, the waste types presented in Table 2 summarize wastes which were, or could have been, generated by manufacturing processes associated with producing semiconductors or specialty circuits. It should be noted that Table 2 will not present volume, quantity, years of use, or storage of wastes, since no documentation is available to report quantities generated at the Sperry Semiconductor property during this period.

TABLE 2
COMPOUNDS/ELEMENTS UTILIZED IN
ELECTRONICS MANUFACTURING PROCESSES

Compounds/Elements

Aluminum	Iron
Cadmium	Lead
Chromium, Total	Nickel
Chromium, Hexavalent	Silver
Copper	Tin
Cyanide	Zinc

(U.S. EPA 1979)

There is no documentation in the state files of any past regulatory violations or past state or federal action at the Sperry Semiconductor property other than the PA. The CT DEP conducted a PA of the Sperry Semiconductor property on May 24, 1985, and recommended a low priority Site Inspection (SI) for the property (U.S. EPA 1985). On November 7, 1990, NUS/FIT conducted soil and sediment sampling at the Sperry Semiconductor property (NUS/FIT 1990).

ENVIRONMENTAL SETTING

Land use within a 1 mile radius of the Sperry Semiconductor property is a mixture of commercial and residential uses. The closest private residence is located 1,500 feet southeast of the Sperry Semiconductor building (NUS/FIT 1990, USGS 1960a). The closest private well could not be determined from the available state file information, although, the Norwalk Board of Health suspects there may be a few private wells in the area (Murphree 1988).

The overburden directly underlying the Sperry Semiconductor property is comprised of fluvial sands and gravel; the thickness of the deposit ranges from 31 to 64 feet. A drumlin composed of glacial till is located approximately 250 feet east of the Sperry Semiconductor building. Till units border the fluvial sand and gravel deposit to the east and west of the property (London 1984). The bedrock underlying the overburden is a metasedimentary felsic gneiss which is coarse grained, and poorly to well foliated. The depth to bedrock, from the surface elevation, may be as much as 85 feet deep (NUS/FIT 1985).

Information regarding depth to groundwater, direction of flow, and velocity within the area of concern is unavailable from State file sources.

Presented in Table 3 are the public groundwater supply sources located within 4 miles of the Sperry Semiconductor property.

TABLE 3
PUBLIC WATER SUPPLY SOURCES WITHIN 4 MILES
OF SPERRY SEMICONDUCTOR

<u>Distance/ Direction from Sperry Semiconductor</u>	<u>Source Name</u>	<u>Location of Source</u>	<u>Approximate Population Served</u>	<u>Source Type</u>
0.8 miles south	Kellogg - Deering Wellfield	Norwalk	4,500	wells screened in overburden
3.25 miles east	New Caanan Water Co. - Lloyd Well	Stamford	8,132	well, screened interval unknown
3.55 miles west	Bridgeport Hydraulics Westport Wells	Westport	40,990	wells, screened in overburden

Total approximate population served: 53,622

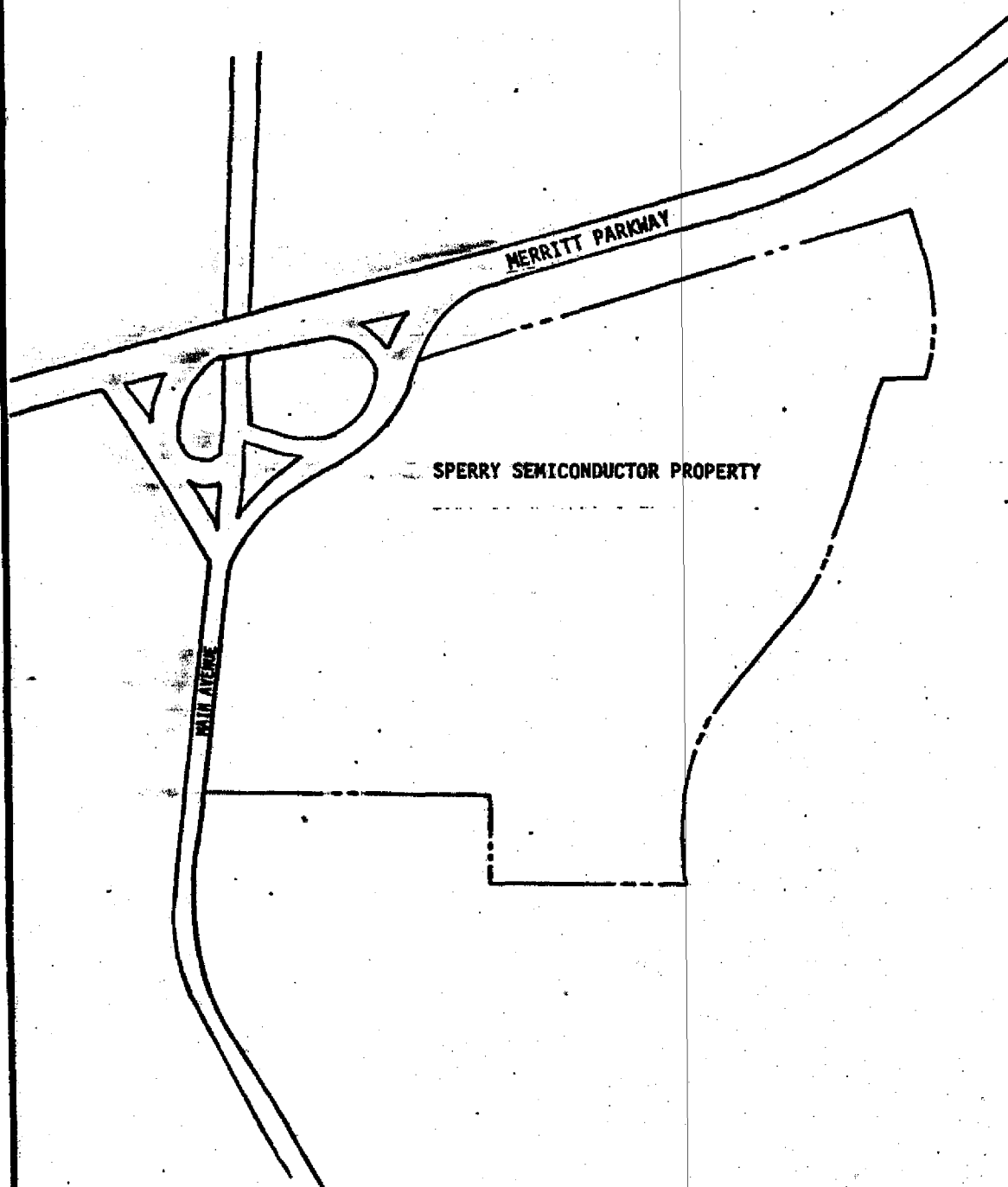
(Easterday 1991c, Galant 1991, Mengal 1985, CT DEP 1986, USGS 1960a, 1960b, 1960c)

Presented in Table 4 are the approximate number of private well users within a 4 mile radius of the Sperry Semiconductor property.

TABLE 4
PRIVATE WELL USERS

<u>Radial Distance from Sperry Semiconductor (miles)</u>	<u>Approximate Population Served by Private Wells</u>
0.00 - 0.25	39
0.25 - 0.50	116
0.50 - 1.00	463
1.00 - 2.00	2,323
2.00 - 3.00	4,527
3.00 - 4.00	6,768
	<hr/> Total 14,236

(Easterday 1991d, USGS 1960a, 1960b, 1960c)



NOT TO SCALE

SITE SKETCH
SPERRY SEMICONDUCTOR
NORWALK, CONNECTICUT



FIGURE 3

Surface water has the potential to flow west overland and enter the Norwalk River 0.15 miles away or could flow east into the intermittent stream which flows from north to south through the property. The intermittent stream does not appear on the Norwalk North Quadrangle; however, due to the topography of the surrounding terrain it is assumed that, surface water from the stream would enter the Norwalk River downstream of the overland flow point of entry. The Norwalk River flows south through the City of Norwalk and eventually enters Long Island Sound at stream mile 7.95 (USGS 1960a, 1960b, 1960c). From this point the remaining 7.05 stream miles are drawn as a radius from the point of entry into Long Island Sound. Surface water flow along the Norwalk River, on average, is 35.3 mgd (million gallons per day), as measured at an upstream gauging station in South Wilton (Ryder et al. 1970).

Surface water along and within the floodplain of the Norwalk River is not meeting Class B requirements, but the river is used for navigation, industrial purposes, and by wildlife (CT DEP 1989). The Sperry Semiconductor property is not within the Norwalk River's floodplain (Easterday 1991e). As the Norwalk River enters Long Island Sound, the surface water is classified as Class B/A, which is considered suitable for recreational, agricultural, industrial, and navigational uses (Murphy 1987).

Upstream of the City of Norwalk, the Norwalk River is used for fishing; however, upon entering Norwalk, the river is only utilized for industrial purposes and recreational/commercial boating. The mouth of the river is used for boating, fishing, and commercial and recreational shellfish harvesting (NUS/FIT 1989). Long Island Sound is used for commercial boating, commercial/recreational fishing, and recreational activities (Reid et al 1979).

The CT DEP has designated several intertidal marshes within 15 miles downstream along the Norwalk River and Long Island Sound as significant wetlands areas. These marshes are recognized as major feeding areas for colonial birds. On the Norwalk Islands, approximately 1.85 miles south of Norwalk Harbor in Long Island Sound, are large populations of nesting colonial birds. One of the islands, Chimon Island, is part of the National Coastal Wildlife Refuge (CT DEP 1989).

RESULTS

On November 7, 1990, NUS/FIT personnel conducted soil and sediment sampling at the Sperry Semiconductor property. Eight soil samples were collected, including a trip blank, duplicate, and reference sample. Two sediment samples, from upstream and downstream locations, were collected from the intermittent stream trending north to south through the property. Sample locations, sample numbers, date of collection, sample matrix, sample source, and remarks are presented in Table 5. The reader is referred to Figure 2 for the sample locations.

All soil and sediment samples were analyzed through the U.S. EPA Contract Laboratory Program (CLP) for Superfund List volatile and semi-volatile organic compounds and inorganic elements. Soil and sediment results for the volatile organic, semi-volatile organic, and inorganic element analyses are listed in Attachment A, Tables 1 through 3.

Note that sample results or sample quantitation limits qualified by "J" or "UJ" on the data tables are considered approximate due to the limitations identified during the quality control review. Sample results qualified by a "R" were rejected values which were also identified during the quality control review, and should be disregarded.

Table 6 is a summary of compounds and elements detected in samples collected by NUS/FIT. Listing of a compound or element is based on its detection at a concentration which is at least three times greater than the concentration of the same compound or element in the reference sample. If the compound or element was not detected in the reference sample, the sample concentration appears on the table with its associated sample quantitation or detection limit. Complete analytical results can be found in Attachments A and B. Soil sample (SS-07) was used as the reference sample for all soil samples and sediment sample, SD-02, was compared to the upstream sediment sample SD-01.

TABLE 5
SAMPLE SUMMARY
SPERRY SEMICONDUCTOR
NORWALK, CONNECTICUT

Samples collected by NUS/FIT on November 7, 1990*

<u>Sample Location #</u>	<u>NUS/FIT Sample #</u>	<u>Sample Type Sample Depth</u>	<u>Sample Source & Location</u>
Soil Samples:			
SS-02	22739	Grab, 1.5 feet deep	From utility pole north of culvert, 8.0 feet north and 6.0 feet west
SS-03	22740	Grab, 2.0 - 2.5 feet deep	From utility pole north of culvert, north 39.5 feet and west 10.0 feet
SS-03 R/D	22741	Grab, 2.0 - 2.5 feet deep	Duplicate of SS-03 replicate for volatile organic analysis. Collected for quality control
SS-04	22742	Grab, 1.5 feet deep	North side of metal rolling door in the rear of Sperry bldg, east 96.0 feet
SS-05	22743	Grab, 3.5 - 4.0 feet deep	From utility pole (#15290) east 44.0 feet
SS-06	22744	Grab, 1.5 feet deep	From northeast corner of bldg, north 53.0 feet
SS-07	22745	Grab, 1.5 feet deep	Reference sample, south along edge of pavement from utility pole (#5-35) 31.5 feet, east 41.0 feet into woods
SS-08	22746	Grab	Trip blank for quality control
Sediment samples:			
SD-01	22747	Grab, 0.5 - 1.0 feet deep	Due east from northeast corner of bldg. along edge of stream bank 300 feet north, 25 feet east to middle of stream
SD-02	22748	Grab, 0.5 - 1.0 feet deep	From utility pole north of culvert, north 9.0 feet along edge of stream bank, east 11.0 feet to middle of stream

* Sample locations depicted on Figure 1.

TABLE 6
SAMPLE RESULTS SUMMARY
SPERRY SEMICONDUCTOR

Sample collected by NUS/FIT on 7 November 1990.

<u>Sample Location</u>	<u>Compound/Element</u>	<u>Sample Concentration</u>	<u>Reference Concentration</u>
SS-02	Fluoranthene	67 J ppb	20 J ppb
	Pyrene	74 J ppb	19 J ppb
	Benzo(a)anthracene	37 J ppb	380 ppb SQL
	Chrysene	51 J ppb	380 ppb SQL
	Benzo(b)fluoranthene	60 J ppb	380 ppb SQL
	Benzo(k)fluoranthene	60 J ppb	380 ppb SQL
	Benzo(a)pyrene	40 J ppb	380 ppb SQL
	Calcium	2290.00 ppm	538.00 ppm
	Lead	53.80 ppm	15.20 ppm
SS-03	Fluorene	13 J ppb	400 ppb SQL
	N-Nitrosodiphenylamine	54 J ppb	400 ppb SQL
	Phenanthrene	210 J ppb	400 ppb SQL
	Anthracene	50 J ppb	400 ppb SQL
	Carbazole	32 J ppb	400 ppb SQL
	Fluoranthene	350 J ppb	20 J ppb
	Pyrene	330 J ppb	19 J ppb
	Benzo(a)anthracene	150 J ppb	400 ppb SQL
	Chrysene	170 J ppb	400 ppb SQL
	Benzo(b)fluoranthene	180 J ppb	400 ppb SQL
	Benzo(k)fluoranthene	160 J ppb	400 ppb SQL
	Benzo(a)pyrene	140 J ppb	400 ppb SQL
	Indeno(1,2,3-cd)pyrene	100 J ppb	400 ppb SQL
	Calcium	1820.00 ppm	538.00 ppm
	Lead	75.00 ppm	15.20 ppm
	Sodium	80.50 ppm	11.12 ppm SDL
SS-03 R/D	Phenanthrene	140 J ppb	400 ppb SQL
	Carbazole	27 J ppb	400 ppb SQL
	Fluoranthene	290 J ppb	20 J ppb
	Pyrene	240 J ppb	19 J ppb
	Benzo(a)anthracene	120 J ppb	400 ppb SQL
	Chrysene	140 J ppb	400 ppb SQL
	Benzo(b)fluoranthene	140 J ppb	400 ppb SQL
	Benzo(k)fluoranthene	160 J ppb	400 ppb SQL
	Benzo(a)pyrene	110 J ppb	400 ppb SQL
	Acenaphthylene	84 J ppb	400 ppb SQL
	Calcium	2060.00 ppm	538.00 ppm
	Lead	65.90 ppm	15.20 ppm
	Sodium	89.30 ppm	10.85 ppm SDL

SS-04	Fluoranthene	130 J ppb	20 J ppb
	Pyrene	150 J ppb	19 J ppb
	Benzo(a)anthracene	100 J ppb	400 ppb SQL
	Chrysene	110 J ppb	400 ppb SQL
	Benzo(b)fluoranthene	110 J ppb	400 ppb SQL
	Benzo(k)fluoranthene	120 J ppb	400 ppb SQL
	Benzo(a)pyrene	100 J ppb	400 ppb SQL
	Acenaphthylene	11 J ppb	400 ppb SQL
	Barium	330.00 J ppm	96.40 J ppm
	Cadmium	2.40 J ppm	0.72 ppm
	Calcium	2240.00 ppm	538.00 ppm
	Lead	61.90 ppm	15.20 ppm
SS-05	1,2-Dichloroethane	12 J ppb	12 ppb SQL
	Trichloroethene	41 ppb	12 ppb SQL
	Fluoranthene	65 J ppb	20 J ppb
	Chrysene	43 J ppb	400 ppb SQL
	Benzo(a)pyrene	39 J ppb	400 ppb SQL
	Lead	46.20 ppm	15.20 ppm
SS-06	Chrysene	20 J ppb	380 ppb SQL
	Benzo(b)fluoranthene	23 J ppb	380 ppb SQL
SD-02	Acenaphthene	65 J ppb	430 ppb SQL
	Fluorene	80 J ppb	430 ppb SQL
	N-Nitrosodiphenylamine	110 J ppb	430 ppb SQL
	Phenanthrene	770 ppb	430 ppb SQL
	Anthracene	140 J ppb	430 ppb SQL
	Fluoranthene	1100 ppb	90 J ppb
	Pyrene	1100 ppb	100 J ppb
	Benzo(a)anthracene	550 ppb	41 J ppb
	Chrysene	570 ppb	50 J ppb
	Benzo(b)fluoranthene	540 ppb	42 J ppb
	Benzo(k)fluoranthene	740 ppb	58 J ppb
	Benzo(a)pyrene	400 J ppb	49 J ppb
	Indeno(1,2,3-cd)pyrene	340 J ppb	430 ppb SQL
	Benzo(g,h,i)perylene	330 J ppb	430 ppb SQL
	Chromium	76.50 ppm	11.00 ppm

Notes:

ppb - parts per billion

ppm - parts per million

SQL - sample quantitation limit

SDL - sample detection limit

Soil Volatile Organic CLP Data:

Two volatile organic compounds, 1,2-dichloroethene (total) and trichloroethene, were detected in the soil at SS-05 at a concentration of 12 J parts per billion (ppb) and 41 ppb, respectively. Soil sample location SS-05 is located between the shipping and receiving parking area and the intermittent stream.

Soil Semi-volatile Organic CLP Data:

Fourteen semi-volatile organic compounds were detected in the soil samples and ranged from 10 J ppb (acenaphthylene at SS-03D) to 350 ppb (fluoranthene at SS-03). The majority of the semi-volatile organic compounds were detected at the sample locations along the western border of the Sperry Semiconductor building (Figure 2). Three polycyclic aromatic hydrocarbon (PAH) compounds were identified at the deepest sample location (SS-05, 3.5 to 4.0 feet deep) and ranged from 39 J ppb to 65 J ppb. At shallower sample locations, 1.5 to 2.5 feet, PAH compounds were identified at higher concentrations ranging from 13 ppb to 330 ppb (Sittig 1981).

Soil Inorganic Element CLP Data:

Five inorganic elements, barium, cadmium, calcium, lead, and sodium were identified at concentrations meeting the criteria used in Table 6. Concentrations ranged from 2.40 J parts per million (ppm) (cadmium) to 2,290.0 ppm (calcium). The most commonly identified inorganic elements, calcium and lead, were found at soil sample locations SS-02, SS-03, SS-03D, and SS-04. These sampling locations are all located between the building and the intermittent stream (Figure 2). Lead was also identified at SS-05, which is located at the northern end of the soil sampling locations on the west bank of the stream. Barium and cadmium, commonly used in the electronics industry, were detected at sample location SS-04 (U.S. EPA 1979, Lucius et al., 1989).

Sediment Volatile Organic CLP Data:

No volatile organic compounds were detected in the sediment samples.

Sediment Semi-volatile Organic CLP Data:

Fourteen semi-volatile organic compounds were detected in the sediment samples collected from the Sperry Semiconductor property. At SD-01, seven compounds were identified at concentrations ranging from 41 J ppb to 100 J ppb. Downstream, at SD-02, fourteen compounds were identified, and the concentrations of the same compounds identified at SD-01 were an average of 11 times higher at location SD-02.

Sediment Inorganic Element CLP Data:

One inorganic element, chromium, was identified in the sediment samples at concentrations meeting the criteria to be used in Table 6.

SUMMARY

The Sperry Semiconductor property is located at 380 Main Avenue in Norwalk, Fairfield County, Connecticut. The property was owned by Sperry Rand Corporation until 1968, when Sperry Rand Corp. sold the property to Pitney Bowes, Incorporated, for one dollar. Sperry Semiconductor used the property to manufacture semiconductors and speciality circuits. Pitney Bowes, Incorporated has used the property as a research and development facility.

In 1985, the CT DEP conducted a PA of the Sperry Semiconductor property and recommended that a low

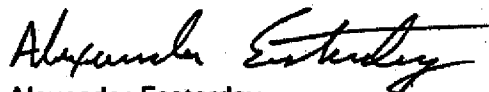
priority Site Inspection be conducted at the property. On November 1, 1990, NUS/FIT personnel conducted a site reconnaissance of the property and on November 7, 1990, collected soil and sediment samples.

Analysis of the samples collected by NUS/FIT, identified 2 volatile organic compounds, 14 semi-volatile organic compounds, and 3 inorganic elements in the soil and sediment samples. Sample locations SS-02, SS-03, SS-03 R/D, SS-04, SS-05, SD-01, and SD-02 exhibited several PAH compounds at concentrations ranging from 10 ppb to 350 ppb. Five inorganic elements were detected in the soil and sediment samples at concentrations from 2.40 J ppm to 2290.00 ppm.

There are approximately 67,858 people served by groundwater sources located within a four mile radius of the Sperry Semiconductor property. The Kellogg-Deering Wellfield is located approximately 0.8 miles south of the property. The wellfield is active and supplies approximately 4,500 people. The nearest private well could not be determined; however, the Norwalk Board of Health suspects there may be private wells in the area of the Sperry Semiconductor property.

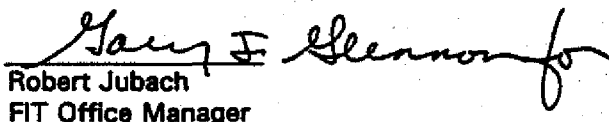
Based on the the proximity of public and private groundwater supply wells and the detected concentrations of contaminants in the soil and sediments, NUS/FIT recommends continued investigative work under CERCLA at the Sperry Semiconductor property.

Submitted by:



Alexander Easterday
Project Manager

Approval:


Robert Jubach
FIT Office Manager

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LIST OF ATTACHMENTS

**ATTACHMENT A - SPERRY SEMICONDUCTOR CLP ANALYTICAL DATA TABLES, SAMPLES
COLLECTED BY NUS/FIT ON NOVEMBER 7, 1990**

**ATTACHMENT B - SPERRY SEMICONDUCTOR SOIL AND SEDIMENT CLP DETECTION AND
QUANTITATION LIMITS TABLES, SAMPLES COLLECTED BY NUS/FIT ON
NOVEMBER 7, 1990**

ATTACHMENT A

**SPERRY SEMICONDUCTOR
CLP ANALYTICAL DATA TABLES
NUS/FIT**

Samples collected on November 7, 1990

TABLE 1 - SOIL AND SEDIMENT CLP SAMPLE VOLATILE ORGANIC ANALYTICAL RESULTS

TABLE 2 - SOIL AND SEDIMENT CLP SAMPLE EXTRACTABLE ORGANIC ANALYTICAL RESULTS

TABLE 3 - SOIL AND SEDIMENT CLP SAMPLE INORGANIC ANALYTICAL RESULTS

TABLE 1 Page 1 of 1
SPERRY SEMICONDUCTOR
NOVEMBER 7, 1990
CLP VOLATILE ORGANIC ANALYSIS
SEDIMENT AND SOIL ANALYTICAL RESULTS (ug/kg)

Sample Location	SD-01	SD-02	SS-02	SS-03	SS-03R	SS-04	SS-05	SS-06	SS-07	SS-08
Sample Number	22747	22748	22739	22740	22741	22742	22743	22744	22745	22746
Traffic Report Number	AY287	AY288	AY279	AY280	AY281	AY282	AY283	AY284	AY285	AY286
Sampling Date	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90
Analysis Date	11/14/90	11/14/90	11/14/90	11/14/90	11/14/90	11/14/90	11/19/90	11/14/90	11/14/90	11/13/90
Percent Solids	83.0	77.0	86.0	85.0	82.0	82.0	82.0	86.0	85.0	0.0
Dilution Factor	1	1	1	1	1	1	1	1	1	1
Remarks					REPLICATE				REFERENCE	BLANK
VOLATILE ORGANIC COMPOUND										
Chloromethane										
Bromomethane										
Vinyl Chloride										
Chloroethane										
Methylene Chloride										
Acetone										
Carbon Disulfide										
1,1-Dichloroethene										
1,1-Dichloroethane										
1,2-Dichloroethene (Total)							12 J			
Chloroform										
1,2-Dichloroethane										
2-Butanone										
1,1,1-Trichloroethane										
Carbon Tetrachloride										
Vinyl Acetate										
Bromodichloromethane										
1,2-Dichloropropane										
cis-1,3-Dichloropropene										
Trichloroethene							41			
Dibromochloromethane										
1,1,2-Trichloroethane										
Benzene										
trans-1,3-Dichloropropene										
Bromoform										
4-Methyl-2-pentanone										
2-Hexanone										
Tetrachloroethene										
1,1,2,2-Tetrachloroethane										
Toluene										
Chlorobenzene										
Ethylbenzene										
Styrene										
Xylene (Total)							53 J			
Total VOC Concentration (ug/Kg)										

A blank space indicates the compound was not detected.
Sample results are reported on dry weight basis.
J Quantitation is approximate due to limitations identified during the quality control review.
Sample Quantitation Limits for the compounds listed above are reported in Attachment B Table 1

TABLE 2 Page 1 of 2
SPERRY SEMICONDUCTOR
November 7, 1990
CLP EXTRACTABLE ORGANIC ANALYSIS
SEDIMENT AND SOIL ANALYTICAL RESULTS (ug/kg)

Sample Location	SD-01	SD-02	SS-02	SS-03	SS-030	SS-04	SS-05	SS-06	SS-07	SS-08
Sample Number	22747	22748	22759	22740	22741	22742	22743	22744	22745	22746
Traffic Report Number	AY287	AY288	AY279	AY280	AY281	AY282	AY283	AY284	AY285	AY286
Sampling Date	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90
Extraction Date	11/12/90	11/12/90	11/12/90	11/12/90	11/12/90	11/12/90	11/12/90	11/12/90	11/12/90	11/12/90
Analysis Date	11/27/90	11/27/90	11/28/90	11/28/90	11/28/90	11/27/90	11/27/90	11/27/90	11/28/90	11/27/90
Percent Solids	85.0	77.0	86.0	85.0	82.0	82.0	82.0	86.0	83.0	0.0
Dilution Factor	1	1	1	1	1	1	1	1	1	1
Remarks					DUPLICATE				REFERENCE	BLANK
SENT-VOLATILE COMPOUND										
Phenol bis (2-Chloroethyl) ether 2-Chlorophenol 1,3-Dichlorobenzene 1,4-Dichlorobenzene Benzyl Alcohol 1,2-Dichlorobenzene 2-Methylphenol 2,2' - oxybis- (1-Chloropropane) 4-Methylphenol N-Nitroso-di-n-propylamine Hexachloroethane Nitrobenzene Isophorone 2-Nitrophenol 2,4-Dimethylphenol Benzoic acid bis (2-Chloroethoxy) methane 2,4-Dichlorophenol 1,2,4-Trichlorobenzene Naphthalene 4-Chloroaniline Hexachlorobutadiene 4-Chloro-3-methylphenol 2-Methylnaphthalene Hexachlorocyclopentadiene 2,4,6-Trichlorophenol 2,4,5-Trichlorophenol 2-Chloronaphthalene 2-Nitroaniline Dimethylphthalate Acenaphthylene 2,6-Dinitrotoluene	R	R	R	R	R	R	R	R	R	R
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
					10 J	11 J				

TABLE 2 Page 2 of 2
SPERRY SEMICONDUCTOR
NOVEMBER 7, 1990
CLP EXTRACTABLE ORGANIC ANALYSIS
SEDIMENT AND SOIL ANALYTICAL RESULTS (ug/kg)

Sample Location	SD-01	SD-02	SS-02	SS-03	SS-03D	SS-04	SS-05	SS-06	SS-07	SS-08
Sample Number	22747	22748	22739	22740	22741	22742	22743	22744	22745	22746
Traffic Report Number	AY287	AY288	AY279	AY280	AY281	AY282	AY283	AY284	AY285	AY286
Sampling Date	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90
Extraction Date	11/12/90	11/12/90	11/12/90	11/12/90	11/12/90	11/12/90	11/12/90	11/12/90	11/12/90	11/12/90
Analysis Date	11/27/90	11/27/90	11/28/90	11/28/90	11/28/90	11/27/90	11/27/90	11/27/90	11/28/90	11/27/90
Percent Solids	83.0	77.0	86.0	83.0	82.0	82.0	82.0	86.0	83.0	0.0
Dilution Factor	1	1	1	1	1	1	1	1	1	1
Remarks					DUPLICATE				REFERENCE	BLANK
SEMI-VOLATILE COMPOUND										
3-Nitroaniline										
Acenaphthene		65 J								
2,4-Dinitrophenol										
4-Nitrophenol										
Dibenzofuran										
2,4-Dinitrotoluene										
Diethylphthalate										
4-Chlorophenyl-phenylether										
Fluorene		80 J		13 J						
4-Nitroaniline										
4,6-Dinitro-2-methylphenol										
N-Nitrosodiphenylamine		110 J		54 J						
4-Bromophenyl-phenylether										
Hexachlorobenzene										
Pentachlorophenol										
Phenanthrene				210 J	140 J					
Anthracene		140 J		50 J						
Carbazole				32 J	27 J					
Di-n-butylphthalate										16 J
Fluoranthene	90 J	1100	67 J	350 J	290 J	130 J	65 J	30 J	20 J	
Pyrene	100 J	1100	74 J	330 J	240 J	150 J	55 J	30 J	19 J	
Butylbenzylphthalate										
3,3'-Dichlorobenzidine										
Benzo(a)anthracene	41 J	550	37 J	150 J	120 J	100 J				
Chrysene	50 J	570	51 J	170 J	140 J	110 J	43 J	20 J		
bis(2-Ethylhexyl)phthalate										28 J
Di-n-octyl phthalate										
Benzo(b)fluoranthene	42 J	540	60 J	180 J	140 J	110 J		23 J		
Benzo(k)fluoranthene	58 J	740	60 J	160 J	160 J	120 J				
Benzo(a)pyrene	49 J	400 J	40 J	140 J	110 J	100 J	39 J			
Indeno (1,2,3-cd)pyrene		340 J		100 J	84 J					
Dibenz(a,h)anthracene										
Benzo(g,h,i)perylene		330 J								

A blank space indicates the compound was not detected.
Sample results are reported on a dry weight basis.
J Quantitation is approximate due to limitations identified during the quality control review.
R Value is rejected.
NA 3/90 SOM Target Compounds was not analysed
Sample Quantitation Limits for the compounds listed above are reported in Attachment B Table 2.

TABLE 3 PAGE 1 of 1
SPERRY SEMICONDUCTOR
NOVEMBER 7, 1990
CLP INORGANIC ANALYSIS
SEDIMENT AND SOIL ANALYTICAL RESULTS (mg/Kg)

Sample Location	SD-01	SD-02	SS-02	SS-03	SS-03D	SS-04	SS-05	SS-06	SS-07
Sample Number	22747	22748	22739	22740	22741	22742	22743	22744	22745
Traffic Report Number	HAR930	HAR931	HAR923	HAR924	HAR925	HAR926	HAR927	HAR928	HAR929
Sampling Date	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90
Analysis Date *	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90
Percent Solids	85.5	82.1	85.5	82.2	83.5	82.9	82.8	82.7	86.1
Dilution Factor	1	1	1	1	1	1	1	1	1
Remarks					DUPLICATE				REFERENCE
INORGANIC ELEMENTS									
Aluminum	P	6910	11100	1800	14300	15100	16200	17900	24800
Antimony	P								
Arsenic	F	1.7	3.8	9.2	6.8	8.4	6.0	9.5	14.5
Barium	P	37.7	75.0	89.2	97.2	85.1	330.0	79.3	91.2
Beryllium	P	0.56	0.40	0.45	0.39	0.31	0.31	0.50	0.60
Cadmium	P						2.4		
Calcium	P	1390	2020	2290	1820	2060	2240	1390	1200
Chromium	P	11.0	76.5	26.9	23.6	23.0	27.4	25.6	32.2
Cobalt	P	5.9	10.4	11.1	10.6	11.1	14.2	11.8	18.7
Copper	P	7.6	18.2	26.8	19.9	18.1	33.1	19.9	14.9
Iron	P	10500	18800	22300	19500	20100	23500	24300	31900
Lead	F	20.9	40.4	53.8	75.0	65.9	61.9	46.2	22.1
Magnesium	P	3220	4790	5380	4310	4620	4960	4390	6280
Manganese	P	134	195	442	569	558	301	565	459
Mercury	CV								
Nickel	P	8.3	14.6	17.1	15.9	15.9	19.0	16.2	19.6
Potassium	P	1190	2350	1950	1350	1300	1040	1360	1510
Selenium	F								
Silver	P								
Sodium	P	106	135		80.5	89.3			
Thallium	F								
Vanadium	P	15.2	30.7	36.9	32.2	32.3	32.6	60.7	45.2
Zinc	P	33.9	79.8	89.3	83.2	85.7	102	70.0	79.5
Cyanide	AS								

Analytical Method NOTE:

F Furnace
P ICP/Flame AA
CV Cold Vapor
AS Semi-Automated Spectrophotometric

A blank space indicates the element was not detected.
Sample results are calculated on a dry weight basis.
Quantitation is approximate due to limitations identified during the quality control review.
Value is rejected.
* Analysis dates for mercury and cyanide are 12/05/90 and 11/21/90 respectively.

Sample Detection Limits for the elements listed above are reported in Attachment B Table 3

ATTACHMENT B

**SPERRY SEMICONDUCTOR
CLP DETECTION AND QUANTITATION LIMIT TABLES
NUS/FIT**

Samples collected on November 7, 1990

TABLE 1 - SOIL AND SEDIMENT CLP SAMPLE VOLATILE ORGANIC QUANTITATION LIMITS

TABEL 2 - SOIL AND SEDIMENT CLP SAMPLE EXTRACTABLE ORGANIC QUANTITATION LIMTS

TABLE 3 - SOIL AND SEDIMENT CLP SAMPLE DETECTION LIMITS

TABLE 1 Page 1 of 1
SPERRY SENICONDUTOR
NOVEMBER 7 1990
CLP VOLATILE ORGANIC ANALYSIS
SEDIMENT AND SOIL QUANTITATION LIMITS (ug/kg)

Sample Location	SD-01	SD-02	SS-02	SS-03	SS-03R	SS-04	SS-05	SS-06	SS-07	SS-08
Sample Number	22747	22748	22759	22740	22741	22742	22743	22744	22745	22746
Traffic Report Number	AY287	AY288	AY279	AY280	AY281	AY282	AY285	AY284	AY285	AY286
Sampling Date	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90
Analysis Date	11/14/90	11/14/90	11/14/90	11/14/90	11/14/90	11/14/90	11/19/90	11/14/90	11/14/90	11/13/90
Percent Solids	85.0	77.0	86.0	85.0	82.0	82.0	82.0	86.0	83.0	9.0
Dilution Factor	1	1	1	1	1	1	1	1	1	1
Remarks					REPLICATE				REFERENCE	BLANK
VOLATILE ORGANIC COMPOUND										
Chloromethane	12	13	12	12	12	12	12	12	12	10
Bromomethane	12	13	12	12	12	12	12	12	12	10
Vinyl Chloride	12	13	12	12	12	12	12	12	12	10
Chloroethane	12	13	12	12	12	12	12	12	12	10
Methylene Chloride	12	13	12	12	12	12	12	12	12	10
Acetone	12	13	12	12	12	12	12	12	12	10
Carbon Disulfide	12	13	12	12	12	12	12	12	12	10
1,1-Dichloroethene	12	13	12	12	12	12	12	12	12	10
1,1-Dichloroethane	12	13	12	12	12	12	12	12	12	10
1,2-Dichloroethene (Total)	12	13	12	12	12	12	12	12	12	10
Chloroform	12	13	12	12	12	12	12	12	12	10
1,2-Dichloroethane	12	13	12	12	12	12	12	12	12	10
2-Butanone	12	13	12	12	12	12	12	12	12	10
1,1,1-Trichloroethane	12	13	12	12	12	12	12	12	12	10
Carbon Tetrachloride	12	13	12	12	12	12	12	12	12	10
Vinyl Acetate	12	13	12	12	12	12	12	12	12	10
Bromodichloromethane	12	13	12	12	12	12	12	12	12	10
1,2-Dichloropropane	12	13	12	12	12	12	12	12	12	10
cis-1,3-Dichloropropene	12	13	12	12	12	12	12	12	12	10
Trichloroethene	12	13	12	12	12	12	12	12	12	10
Dibromochloromethane	12	13	12	12	12	12	12	12	12	10
1,1,2-Trichloroethane	12	13	12	12	12	12	12	12	12	10
Benzene	12	13	12	12	12	12	12	12	12	10
trans-1,3-Dichloropropene	12	13	12	12	12	12	12	12	12	10
Bromoform	12	13	12	12	12	12	12	12	12	10
4-Methyl-2-pentanone	12	13	12	12	12	12	12	12	12	10
2-Hexanone	12	13	12	12	12	12	12	12	12	10
Tetrachloroethene	12	13	12	12	12	12	12	12	12	10
1,1,2,2-Tetrachloroethane	12	13	12	12	12	12	12	12	12	10
Toluene	12	13	12	12	12	12	12	12	12	10
Chlorobenzene	12	13	12	12	12	12	12	12	12	10
Ethylbenzene	12	13	12	12	12	12	12	12	12	10
Styrene	12	13	12	12	12	12	12	12	12	10
Xylene (Total)	12	13	12	12	12	12	12	12	12	10

Sample Quantitation Limits are reported on dry weight basis
UJ Quantitation limit is approximate due to limitations identified during the quality control review.

TABLE 2 Page 1 of 2
SPERRY SEMICONDUCTOR
NOVEMBER 7, 1990
CLP EXTRACTABLE ORGANIC ANALYSIS
SEDIMENT AND SOIL SAMPLE QUANTITATION LIMITS (ug/kg)

Sample Location	SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	SS-07	SS-08
Sample Number	22747	22748	22749	22750	22751	22752	22753	22754
Traffic Report Number	AY287	AY288	AY289	AY290	AY291	AY292	AY293	AY294
Sampling Date	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90
Extraction Date	11/12/90	11/12/90	11/12/90	11/12/90	11/12/90	11/12/90	11/12/90	11/12/90
Analysis Date	11/27/90	11/27/90	11/28/90	11/27/90	11/27/90	11/27/90	11/28/90	11/27/90
Percent Solids	85.0	77.0	85.0	82.0	82.0	86.0	85.0	0.0
Dilution Factor	1	1	1	1	1	1	1	1
Remarks				DUPLICATE			REFERENCE	BLANK
SEMI-VOLATILE COMPOUND								
Phenol	400	430	400	400	400	380	400	330
bis (2-Chloroethyl) ether	400	430	400	400	400	380	400	330
2-Chlorophenol	400	430	400	400	400	380	400	330
1,3-Dichlorobenzene	400	430	400	400	400	380	400	330
1,4-Dichlorobenzene	400	430	400	400	400	380	400	330
1,2-Dichlorobenzene	400	430	400	400	400	380	400	330
2-Methylphenol	400	430	400	400	400	380	400	330
2,2'-oxybis								
(1 - Chloropropane)								
4-Methylphenol	400	430	400	400	400	380	400	330
N-Nitroso-di-n-propylamine	400	430	400	400	400	380	400	330
Hexachloroethane	400	430	400	400	400	380	400	330
Nitrobenzene	400	430	400	400	400	380	400	330
Isophorone	400	430	400	400	400	380	400	330
2-Nitrophenol	400	430	400	400	400	380	400	330
2,4-Dimethylphenol	400	430	400	400	400	380	400	330
bis (2-Chloroethoxy) methane	400	430	400	400	400	380	400	330
2,4-Dichlorophenol	400	430	400	400	400	380	400	330
1,2,4-Trichlorobenzene	400	430	400	400	400	380	400	330
Naphthalene	400	430	400	400	400	380	400	330
4-Chloroaniline	400	430	400	400	400	380	400	330
Hexachlorobutadiene	400	430	400	400	400	380	400	330
4-Chloro-3-methylphenol	400	430	400	400	400	380	400	330
2-Methylnaphthalene	400	430	400	400	400	380	400	330
Hexachlorocyclopentadiene	400	430	400	400	400	380	400	330
2,4,6-Trichlorophenol	1900	2100	1900	2000	2000	1900	2000	1600
2,4,5-Trichlorophenol	400	430	400	400	400	380	400	330
2-Chloronaphthalene	1900	2100	1900	2000	2000	1900	2000	1600
2-Nitroaniline	400	430	400	400	400	380	400	330
Dimethylphthalate	400	430	400	400	400	380	400	330
Acenaphthylene	400	430	400	400	400	380	400	330
2,6-Dinitrotoluene	400	430	400	400	400	380	400	330

TABLE 2 Page 2 of 2
SPERRY SEMICONDUCTOR
NOVEMBER 7, 1990
CLP EXTRACTABLE ORGANIC ANALYSIS
SEDIMENT AND SOIL SAMPLE QUANTITATION LIMITS (ug/kg)

Sample Location	SD-01	SD-02	SS-02	SS-03	SS-030	SS-04	SS-05	SS-06	SS-07	SS-08
Sample Number	22747	22748	22739	22740	22741	22742	22743	22744	22745	22746
Traffic Report Number	AY287	AY288	AY279	AY280	AY281	AY282	AY283	AY284	AY285	AY286
Sampling Date	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90
Extraction Date	11/12/90	11/12/90	11/12/90	11/12/90	11/12/90	11/12/90	11/12/90	11/12/90	11/12/90	11/12/90
Analysis Date	11/27/90	11/27/90	11/28/90	11/28/90	11/28/90	11/27/90	11/27/90	11/27/90	11/28/90	11/27/90
Percent Solids	83.0	77.0	86.0	83.0	82.0	82.0	82.0	86.0	83.0	0.0
Dilution Factor	1	1	1	1	1	1	1	1	1	1
Remarks					DUPLICATE				REFERENCE	BLANK
SEMI-VOLATILE COMPOUND										
3-Nitroaniline	1900	2100	1900	1900	2000	2000	2000	1900	1900	1600
Acenaphthene	400	430	380	400	400	400	400	380	400	330
2,4-Dinitrophenol	1900	2100	1900	1900	2000	2000	2000	1900	1900	1600
4-Nitrophenol	1900	2100	1900	1900	2000	2000	2000	1900	1900	1600
Dibenzofuran	400	430	380	400	400	400	400	380	400	330
2,4-Dinitrotoluene	400	430	380	400	400	400	400	380	400	330
Diethylphthalate	400	430	380	400	400	400	400	380	400	330
4-Chlorophenyl-phenylether	400	430	380	400	400	400	400	380	400	330
Fluorene	400	430	380	400	400	400	400	380	400	330
4-Nitroaniline	1900	2100	1900	1900	2000	2000	2000	1900	1900	1600
4,6-Dinitro-2-methylphenol	1900	2100	1900	1900	2000	2000	2000	1900	1900	1600
N-Nitrosodiphenylamine	400	430	380	400	400	400	400	380	400	330
4-Bromophenyl-phenylether	400	430	380	400	400	400	400	380	400	330
Hexachlorobenzene	400	430	380	400	400	400	400	380	400	330
Pentachlorophenol	1900	2100	1900	1900	2000	2000	2000	1900	1900	1600
Phenanthrene	400	430	380	400	400	400	400	380	400	330
Anthracene	400	430	380	400	400	400	400	380	400	330
Carbazole	400	430	380	400	400	400	400	380	400	330
Di-n-butylphthalate	400	430	380	400	400	400	400	380	400	330
Fluoranthene	400	430	380	400	400	400	400	380	400	330
Pyrene	400	430	380	400	400	400	400	380	400	330
Butylbenzylphthalate	400	430	380	400	400	400	400	380	400	330
3,3'-Dichlorobenzidine	400	430	380	400	400	400	400	380	400	330
Benzo(a)anthracene	400	430	380	400	400	400	400	380	400	330
Chrysene	400	430	380	400	400	400	400	380	400	330
bis(2-Ethylhexyl)phthalate	400	430	380	400	400	400	400	380	400	330
Di-n-octylphthalate	400	430	380	400	400	400	400	380	400	330
Benzo(b)fluoranthene	400	430	380	400	400	400	400	380	400	330
Benzo(k)fluoranthene	400	430	380	400	400	400	400	380	400	330
Benzo(a)pyrene	400	430	380	400	400	400	400	380	400	330
Indeno (1,2,3-cd)pyrene	400	430	380	400	400	400	400	380	400	330
Dibenz(a,h)anthracene	400	430	380	400	400	400	400	380	400	330
Benzo(g,h,i)perylene	400	430	380	400	400	400	400	380	400	330

Sample Quantitation Limits are reported on a dry weight basis
R Value is rejected.
NA 3/90 SOW Target Compound was not analyzed

TABLE 3 PAGE 1 OF 1
SPERRY SEMICONDUCTOR
CLP INORGANIC ANALYSIS
NOVEMBER 7, 1990
SEDIMENT AND SOIL SAMPLE DETECTION LIMITS (mg/Kg)

Sample Location		S0-01	S0-02	SS-02	SS-03	SS-030	SS-04	SS-05	SS-06	SS-07
Sample Number		22747	22748	22759	22740	22741	22742	22743	22744	22745
Traffic Report Number		HAR930	HAR931	HAR923	HAR924	HAR925	HAR926	HAR927	HAR928	HAR929
Sampling Date		11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90	11/07/90
Analysis Date*		12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90
Percent Solids		85.5%	81.2%	85.5%	82.2%	83.5%	82.9%	82.8%	82.7%	86.1%
Dilution Factor		1	1	1	1	1	1	1	1	1
Remarks						Duplicate				Reference
INORGANIC ELEMENTS										
Aluminum	P	5	5	5	5	5	5	5	5	5
Antimony	P	R	R	R	R	R	R	R	R	R
Arsenic	P	0.4	0.4	0.4	0.5	0.5	0.5	0.4	0.4	0.4
Barium	P	0.4	0.5	0.4	0.5	0.5	1	0.5	0.5	0.4
Beryllium	P	0.21	0.23	0.21	0.23	0.23	0.24	0.23	0.23	0.2
Cadmium	P	0.6	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.7
Calcium	P	3	3	3	3	3	3	3	3	3
Chromium	P	1.1	1.2	1.0	1.1	1.2	1.2	1.2	1.2	1.1
Cobalt	P	1.5	1.6	1.5	1.6	1.6	1.7	1.6	1.6	1.5
Copper	P	0.6	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.7
Iron	P	12	2	2	2	2	2	2	2	2
Lead	P	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Magnesium	P	14	15	13	14	15	15	15	15	14
Manganese	P	10	0	0	0	10	0	0	0	0
Mercury	CV	0.11	0.12	0.11	0.10	0.10	0.10	0.11	0.10	0.09
Nickel	P	1.3	1.4	1.3	1.4	1.4	1.4	1.4	1.4	1.3
Potassium	P	29	31	28	30	31	32	31	31	29
Selenium	F	0.41 UJ	0.42 UJ	0.44 UJ	0.46 UJ	0.45 UJ	0.48 UJ	0.44 UJ	0.45 UJ	0.41 UJ
Silver	P	1.07 UJ	1.15 UJ	1.04 UJ	1.13 UJ	1.17 UJ	1.19 UJ	1.16 UJ	1.15 UJ	1.10 UJ
Sodium	P	10.3	10.1	R	11.1	10.9	R	R	R	R
Thallium	F	0.61	0.63	0.66	0.70	0.68	0.72	0.66	0.67	0.62
Vanadium	P	0.6	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.7
Zinc	P	1.9	2.1	1.9	2.0	2.1	2.1	2.1	2.1	2.0
Cyanide	AS	R	R	R	R	R	R	R	R	R

Analytical Method

F Furnace AA

P ICP/Flame AA

CV Cold Vapor

AS Semi-Automated Spectrophotometric

NOTE:

Sample Detection Limits are calculated on a dry weight basis.
UJ Sample Detection Limit is approximate due to limitations identified during the quality control review.
R Value is rejected.
* Analysis dates for mercury and cyanide are 12/05/90 and 11/21/90 respectively.